Preventing Disease in Marines

CDR Scott Sherman, MC, USN

A Navy preventive medicine team was busy working in central Iraq supporting Marines and Navy medical personnel here during Operation Iraqi Freedom.

The 12 members of the Preventive Medicine Mobile Medical Augmentation Readiness Team 5 (PM-MMART 5) spent months preparing for the deployment and mounting an offensive against the preventive medicine challenges that are critical to maintaining a robust force health protection (FHP) posture.

The team was made up of five officers and seven enlisted personnel who have expertise in medical entomology, preventive medicine/environmental health, microbiology, and industrial hygiene. The team was also capable of analyzing a wide range of chemical, biological, and radiological warfare agents.

Medical staff and Marine operational staffs worked together to deploy three of these public health surveillance teams into theater: one in Ad-Diwaniyah in central Iraq, one in southern Iraq, and one in Kuwait to provide advanced diagnostic and specialty consultation to medical officers and operational commanders. Their presence was essential, according to CAPT Joel Lees, 1st Marine Expeditionary Force Surgeon. "Team 5 was a great asset to us!" says Lees. "They were able to rapidly tackle some potentially important public health issues for us and get good advice out to the commanders and their medical staffs in time to help keep the problems minimal."

Photo by author

Members of PM-MMART 5 embark with their equipment on a C-141 out of March AFB, CA, 28 March.

Shortly after arriving, PM-MMART 5 made the first laboratory diagnoses of malaria, shigella, and norovirus in Marines and Sailors in Iraq. "We concentrated on preventing or mitigating that subset of medical issues that can rapidly degrade the combat power of the Marines," said CDR Scott Sherman, medical team leader and public health physician. "Because of our range of expertise and specialty equipment, we get involved in a very wide variety of medical issues that have the potential to cause acute disease or are of concern for chronic exposures."

The team was extensively utilized by elements of the 1st Marine Expe-

ditionary Force for mosquito control operations, water testing, blood/stool testing for infectious agents, epidemiological consultation, environmental sampling, safety consultations, traditional field sanitation and hygiene issues, and analysis of unusual chemicals or vapors in camp areas and at one of the liberated palace compounds.

"The Commanders did a good job identifying areas of concern," said LCDR Lucy Walker, PhD, industrial hygiene specialist for PM-MMART 5 and assistant team leader. "We were able to go in, characterize the nature of the exposure and give them good, practical advice on how to reduce the threats and then document those exposures for the ongoing Force Health Protection program."

HMC Robert Hunt, the leading chief petty officer with the team, added, "The PM technicians out in the field with these units do a great job in keeping the disease and non-battle injuries (DNBI) down in their units; this is a tough place for public health and they are keeping DNBI very low."

In addition to the individual expertise of the members, the team deployed highly technical equipment that gives them the ability to do advanced microbiological analysis (PCR, Elisa, culture, fluorescent antibody) and sophisticated water and toxic chemical testing from colorimetric to gas chromatography, mass spectroscopy, and infrared spectroscopy.

The PM-MMART teams are an outgrowth of the "forward deployable laboratory" utilized in the Gulf War and Somalia. Over the last decade the Navy Environmental Health Center (NEHC) has funded and trained six of these deployable teams to help to ensure robust FHP for deployed forces. Over the next 2 years the teams will complete the transition to Forward Deployable Preventive Medicine Units (FD-PMUs).

After staging and coordination from Camp Luzon, TAA Coyote, Kuwait, the team loaded up on Seabee vehicles and joined an Army MP convoy to travel to central Iraq. The camp was on an abandoned health sciences university campus and had been occupied for only a few days when the unit arrived. Due to the large amount of destruction from looting after the war began, the camp was an abundant source of preventive medicine challenges for all aspects of the team — chemistry, microbiology, vector control, sanitation, and basic preventive medicine.

Under the direction of LTJG Christensen, a consolidated preventive medicine effort of all PM assets in the camp successfully brought the camp from red to amber status and improvements were made daily to move the camp toward green. The team provided consultation for building habitability, shower and head placement throughout the camp, proper handling and disposal of hazmat found in buildings, and any other concerns that unit PMTs needed advice on.

The entomology component from DVECC conducted daily vector control operations throughout settled camps and unit staging areas. Word quickly spread throughout the area that pest control capabilities had arrived; therefore, requests for fly bait and mosquito spraying came in daily through the unit PMTs. All standing water, catch basins, and flooded dry wells throughout the camp facility were sampled/treated for mosquitoes. Fly bait was laid in all latrines and delivered to 1stMarDiv for use in their staging area.

The chemistry team leader was busy conducting walkthroughs of the numerous chemical labs and warehouses throughout the university complex. Issues such as classification of asbestos, identification of unknown substances, and field expedient remediation advice requests came in daily. The microbiology team was busy with classification of a widespread diarrhea problem that was moving throughout the Sailors and Marines in the area of operations. Specimen collection kits for fever/diarrhea clinical samples were provided to many battalion aid stations to obtain clinical samples to characterize disease/illness.

Future operations of PM-MMART 5 will involve conducting Environmental Baseline Surveys for camps occupied by coalition forces for more than 30 days in the theater of operations. This is a new requirement in the ongoing plans to provide comprehensive Force Health Protection for deployed personnel. As part of the surveys representative soil, water, and air samples will be analyzed locally using mass spectroscopy, gas chromatography, and various reagent test kits appropriate for "field" analysis and then forwarded to the U.S. Army Center for Health Promotion and Preventive Medicine for confirmatory testing and historical categorization of environmental exposures encountered by deployed personnel. ❑

CDR Sherman is assigned to NEPMU-5, San Diego, CA, and was deployed with PM-MART 5 in Iraq.